

## REMARKS

### I. Status Summary

Claims 54, 55 and 57 are pending in the present application and have been examined by the U.S. Patent and Trademark Office (hereinafter "the Patent Office"). Claims 54, 55 and 57 presently stand rejected.

The Patent Office has objected to the specification of the subject application as allegedly incorporating one or more embedded hyperlinks and/or other form of browser-executable code.

Claims 54, 55 and 57 have been rejected by the Patent Office under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention.

The Patent Office has rejected claims 54, 55 and 57 under 35 U.S.C. §102(e) as allegedly being anticipated by U.S. Patent Application Publication No. 2003/0233670 to Edgerton et al. (hereinafter referred to as "Edgerton et al.").

Claims 54, 55 and 57 have been amended in the present amendment. Support for the amendments can be found throughout the specification as filed, including particularly at page 76, lines 12-13; page 80, lines 17-21; page 80, line 22 through page 81, line 2; page 144, lines 26-30; page 167, lines 6-10; and Example 1. No new matter has been added.

Reconsideration of the application based on the arguments set forth herein is respectfully requested.

### II. Interview Summary

Applicants conducted a telephonic interview with Examiner Brent Page on October 18, 2007. Participating in the telephonic interview with Examiner Page were applicants' attorney of record, Arles A. Taylor, Jr. and patent agent Leon R. Legleiter. Applicants sincerely appreciate the Examiner's time and consideration in agreeing to and participating in the telephonic interview.

Serial No.: 10/533,232

During the telephonic interview overall concepts of the disclosed and claimed subject matter were discussed. Applicants and Examiner Page discussed the objections and rejections raised in the outstanding Official Action as well as proposed amendments to the claims. Applicants respectfully submit that the Amendments and Remarks presented herein are believed to be consistent with their understanding of the Examiner's position as presented during the telephonic interview.

### III. Response to the Objection to the Specification

The Patent Office has objected to the specification of the subject application as allegedly incorporating one or more embedded hyperlinks and/or other form of browser-executable code.

In response applicants respectfully submit that the instant application has been amended as indicated hereinabove. In particular, the hyperlink has been removed from the paragraph starting at page 50, line 6 and continuing through page 51, line 3 of the specification as filed (paragraph [193] of the patent application publication). In place of the hyperlink applicants have amended the specification to refer to the website of the National Center for Biotechnology Information. Additionally, the hyperlink has been removed from the paragraph starting at page 75, line 17 and continuing through page 76, line 11 of the specification as filed (paragraph [264] of the patent application publication). In place of the hyperlink applicants have amended the specification to refer to the website of the Torrey Mesa Research Institute. No new matter has been added.

The Patent Office also asserts that paragraph [1505] contains a hyperlink. However, applicants respectfully submit that the Patent Office appears to be referring to the last paragraph of the published application as viewed in PAIR, which is standard language inserted by the Patent Office in reference to sequence listings. As such, applicants respectfully submit that the instant paragraph was not included in the specification as filed and the hyperlink cannot be removed by the applicant. In particular, the paragraph in question reads as follows:

Serial No.: 10/533,232

Sequence CWU 0 SQTB SEQUENCE LISTING The patent application contains a lengthy "Sequence Listing" section. A copy of the "Sequence Listing" is available in electronic form from the USPTO web site (<http://seqdata.uspto.gov/?pageRequest=docDetail&DocID=US20060253917A1>). An electronic copy of the "Sequence Listing" will also be available from the USPTO upon request and payment of the fee set forth in 37 CFR 1.19(b)(3).

Applicants respectfully submit that the instant objection has been addressed. Accordingly, applicants respectfully request that the instant objection to the specification be withdrawn at this time.

IV. Response to the 35 U.S.C. §112, Second Paragraph, Rejection of Claims 54, 55 and 57

Claims 54, 55 and 57 have been rejected by the Patent Office under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention.

Particularly, the Patent Office asserts that claim 54 contains a number of parentheses and that it is unclear whether the parentheses are intended to be a claim element.

The Patent Office further asserts that claim 54 is missing an expression step and therefore does not result in "modulating proliferation".

Further, the Patent Office asserts that claim 54 is unclear as reciting "wherein the polypeptide binds in a yeast two hybrid assay to a fragment...". Particularly, the Patent Office asserts that it is unclear whether the binding ability determines if a protein is proliferation-related.

Additionally, the Patent Office asserts that the recitation of "expression" in claim 55 lacks antecedence.

Finally, the Patent Office asserts that the recitation of "results in an enhancement" in claim 55 lacks comparative basis.

Serial No.: 10/533,232

After careful consideration of the rejection and the Patent Office's basis therefore, applicants respectfully traverse the rejection and submit the following remarks.

Initially, in response to the Patent Office assertion that the elements of claim 54 are unclear due to the incorporation of a number of parenthesis, applicants respectfully submit that claim 54 has been amended as indicated hereinabove. In particular, applicants respectfully submit that the parenthesis have been removed from claim 54.

Accordingly, applicants respectfully submit that the elements of claim 54 are believed to be clear and distinct.

Next, with regard to the Patent Office assertion that claim 54 is missing an expression step and therefore does not result in "modulating proliferation", applicants respectfully submit that claim 54 has been amended as indicated hereinabove. In particular, claim 54 has been amended to recite a method for modulating proliferation of a plant cell comprising, *inter alia*, expressing the polypeptide in the cell. Support for the amendment can be found throughout the specification as filed, and particularly at page 80, line 22, through page 81, line 2. No new matter has been added.

Regarding the Patent Office assertion that it is unclear whether the binding ability determines if a protein is proliferation-related, applicants respectfully submit that one of ordinary skill in the art would understand, upon review of the specification, that the disclosed methods are directed to modulating proliferation of a plant cell through the expression of a cell proliferation-related polypeptide, wherein the cell-proliferation related polypeptide is identified using a yeast two hybrid assay. In addition, applicants respectfully submit that one of skill in the art, upon review of the instant disclosure, would understand that the binding of the cell proliferation-related polypeptide to the fragment of a protein, i.e. the "bait" protein, in the yeast two hybrid assay is indicative of the proliferation-related nature of the proliferation related polypeptide. Please see page 76, lines 12-13, of the instant specification as filed, which recites:

Serial No.: 10/533,232

Many of the cell proliferation-related proteins of the presently disclosed subject matter interact with one another.

Applicants also respectfully direct the Patent Office to page 167, lines 6-10, of the specification as filed, which recites:

Some of the proteins identified represent rice proteins previously uncharacterized. Based on their predicted biological function and on the ability of the prey proteins to specifically interact with cyclin OsS49462 and cyclin OsCYCOS2, the interacting proteins are likely part of a protein network involved in the cyclin-mediated regulation of the cell cycle.

Accordingly, applicants assert that one of ordinary skill in the art would understand that the phrase “wherein the polypeptide binds in a yeast two hybrid assay to a fragment...” is indicative of the polypeptides function as a proliferation-related polypeptide based upon the ability to bind in the yeast two hybrid assay.

However, in an effort to facilitate prosecution, applicants respectfully submit that claim 54 has been amended herein to recite, *inter alia*, wherein the binding of the polypeptide in the yeast two hybrid assay to the fragment of a protein of SEQ ID NO: 210 is indicative that the polypeptide is a proliferation-related polypeptide. Support for the instant amendment can be found throughout the specification as filed, and particularly at page 76, lines 12-13, and page 167, lines 6-10. No new matter has been added.

Next, regarding the Patent Office assertion that the recitation of “expression” in claim 55 lacks antecedence, applicants respectfully submit that claim 54 has been amended, as indicated hereinabove, to recite, *inter alia*, expressing the polypeptide in the cell. As such, applicants respectfully submit that the recitation of the phrase “wherein expression” in claim 55 is now believed to have proper antecedence.

Finally, with regard to the Patent Office assertion that the recitation of “results in an enhancement” in claim 55 lacks comparative basis, applicants respectfully submit that claim 55 has been amended as indicated hereinabove. In particular,

Serial No.: 10/533,232

claim 55 has been amended to now recite, *inter alia*, wherein expression of the polypeptide in the cell results in an enhancement of a rate or extent of proliferation of the cell compared to a cell not introduced with an isolated nucleic acid molecule encoding a cell proliferation-related polypeptide. Support for the amendment to claim 55 can be found throughout the specification as filed, and particularly at page 80, lines 17-21. No new matter has been added.

Applicants respectfully submit that the rejection of claims 54 and 55 under 35 U.S.C. §112, second paragraph, has been addressed. Applicants therefore respectfully request that the instant rejection of claims 54 and 55 be withdrawn at this time. A Notice of Allowance is also respectfully requested.

V. Response to the 35 U.S.C. §102(e) Rejection of Claims 54, 55 and 57  
in view of Edgerton *et al.*

The Patent Office has rejected claims 54, 55 and 57 under 35 U.S.C. §102(e) as allegedly being anticipated by Edgerton *et al.* In particular, the Patent Office asserts that Edgerton *et al.* teaches SEQ ID NO: 44, which is 100% identical to SEQ ID NO: 209 in the instant application, in an expression vector to increase plant yield via changing the cell cycle. As such, the Patent Office asserts that Edgerton *et al.* teaches each and every element of the rejected claims such that the claims are anticipated.

After careful consideration of the rejection and the Patent Office's basis therefore, applicants respectfully traverse the rejection and submit the following remarks.

Initially, applicants respectfully submit that claim 54 has been amended to recite a method for modulating proliferation of a plant cell comprising, *inter alia*, introducing into the plant cell an expression cassette comprising an isolated nucleic acid molecule encoding a cell proliferation-related polypeptide, wherein the polypeptide binds in a yeast two hybrid assay to a fragment of a protein of SEQ ID NO: 210. As such, the fragment of a protein of SEQ ID NO: 210 acts as the "bait" protein in the yeast two hybrid assay whereas the polypeptide that binds to the bait

Serial No.: 10/533,232

protein, i.e. the cell proliferation-related polypeptide, is the "prey" or "interactor" protein.

To elaborate, claim 54 is directed to a method of modulating proliferation of a plant cell comprising the steps of introducing into the plant cell an expression cassette comprising an isolated nucleic acid molecule encoding a cell proliferation-related polypeptide and expressing the cell proliferation-related polypeptide within the cell. The proliferation-related polypeptide that is expressed in the cell to modulate proliferation is selected based upon its ability to bind the bait protein in a yeast two hybrid assay. Therefore, applicants respectfully submit that it is the interactor protein which binds to the bait protein that constitutes the cell proliferation-related polypeptide that effectuates the modulation in plant cell proliferation upon expression within the cell. Applicants respectfully direct the Patent Office's attention to Table 7 of the specification as filed, which clearly lists the bait protein of SEQ ID NO: 210 and the interactors, i.e. cell proliferation-related polypeptides, capable of binding thereto in a yeast two hybrid assay.

Additionally, applicants respectfully submit that dependent claim 57 has been amended herein so as to clarify the claimed subject matter. In particular claim 57 has been amended to recite, *inter alia*, wherein the fragment of a protein of SEQ ID NO: 210 is encoded by the nucleic acid sequence of SEQ ID NO: 209. Support for the amendment to claim 57 can be found throughout the specification as filed, and particularly at page 17, line 24, through page 18, line 5 and the table on page 24. No new matter has been added.

Thus, applicants respectfully submit that Edgerton et al. does not disclose, teach or suggest each and every element of independent claim 54. Accordingly, the 35 U.S.C. §102(e) rejection of independent claim 54 in view of Edgerton et al. is believed to have been addressed. Applicants respectfully request that the instant rejection of independent claim 54 be withdrawn at this time. A Notice of Allowance is also respectfully requested.

Applicants respectfully submit that claims 55 and 57 depend directly on independent claim 54 and are therefore also believed to be distinguished from

Serial No.: 10/533,232

Edgerton et al. Thus, applicants respectfully request that the instant rejection of claims 55 and 57 also be withdrawn at this time. A Notice of Allowance is also respectfully requested.

#### CONCLUSION

In light of the above amendments and remarks, it is respectfully submitted that the present application is now in proper condition for allowance, and an early notice to such effect is earnestly solicited.

If any small matter should remain outstanding after the Patent Examiner has had an opportunity to review the above Remarks, the Patent Examiner is respectfully requested to telephone the undersigned patent attorney in order to resolve these matters and avoid the issuance of another Official Action.

#### DEPOSIT ACCOUNT

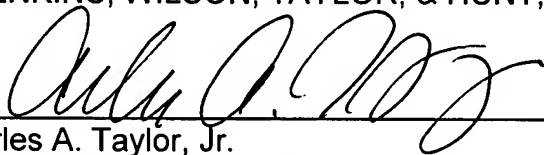
The Commissioner is hereby authorized to charge any deficiencies of payment or credit any overpayments associated with the filing of this Amendment to Deposit Account No. 50-0426.

Respectfully submitted,

JENKINS, WILSON, TAYLOR, & HUNT, P.A.

Date: October 23, 2007

By:



Arles A. Taylor, Jr.  
Registration No. 39,395  
Customer No. 25297  
(919) 493-8000

AAT/LRL/dbp